

Honors Geometry

Notes Section 2.2

Analyze Conditional Statements

VOCABULARY

Conditional Statement: an if-then statement

Hypothesis: the part of the conditional statement between "if" and "then".

Conclusion: the part of the conditional statement after the word "then"

Negation: the opposite of the original statement

Converse: to switch the if and then statements around

Inverse: to negate the Conditional Statement

Contrapositive: to negate the Converse

Equivalent Statements: when both statements are True or False.

Perpendicular Lines: lines that intersect to form 4 right angles;



Biconditional Statement: a statement that contains the phrase "if and only if"

EXAMPLE 1 Rewrite the conditional statement in if-then form.

a) All birds have feathers.

b) Two angles are supplementary if they are a linear pair.

c) $2x + 7 = 1$, because $x = -3$

d) All 90° angles are right angles.

EXAMPLE 2 Write the if-then form, the converse, the inverse and the contrapositive of the following statement. Also, determine if they are True or False statements.

Guitar players are musicians.

Conditional _____

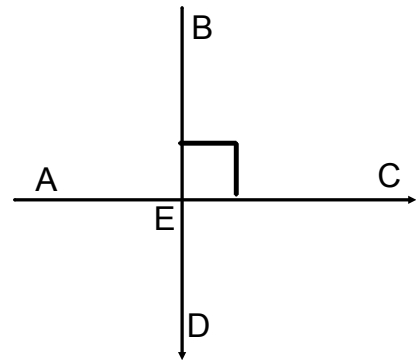
Converse _____

Inverse _____

Contrapositive _____

EXAMPLE 3 Decide whether each statement about the diagram is True or False. Explain.

a) $\overleftrightarrow{AC} \perp \overleftrightarrow{BD}$



b) $\angle AEB$ & $\angle CEB$ are a linear pair

c) \overrightarrow{EA} and \overrightarrow{EB} are opposite rays

EXAMPLE 4 Write the following statements as biconditionals.

a) If 2 lines intersect to form a right angle, then they are \perp .

b) If Mary is in theater class, she will be in the fall play. If Mary is in the fall play, she must be taking theater class.
